Analysis of Screening for Adult Attention Deficit Hyperactivity Disorder in the Clinical Settings

By

Stacy Welsh

A thesis submitted in partial fulfillment

of the requirements for the degree of

Master of Science in Nursing

The University of Michigan-Flint

March 2007

Approved:

Chairperson: Janet Barnfather, PhD, RN 4-11-07

Janet Barnfather, PhD, RN Date

Committee Member: Cynthia Rourke 4-6-07

Cynthia Rourke, B.A., MSLS Date

Abstract

Attention Deficit Hyperactivity Disorder (ADHD) is a childhood disorder which is not outgrown. Symptoms of ADHD are now known to continue into adulthood. Children with ADHD who are managed by pediatricians until late adolescence often are unmanaged in adulthood. Extensive research indicates that childhood ADHD continues into adulthood undiagnosed and untreated by primary care providers.

Purpose: The purpose of this study was to examine the extents to which Nurse Practitioners who are primary care providers (PCP) screen for Adult ADHD, manage its care and exhibit positive or negative attitudes and perceptions toward Adult ADHD.

Method: Participants were obtained through the Michigan Nurses Association by purchasing a list of practicing Nurse Practitioners within the state of Michigan. Within the list alphabetically arranged every fifth name was withdrawn and mailed a questionnaire. Nurse Practitioners were sent a questionnaire developed by the researcher to determine if Adult ADHD is being screened and diagnosed during clinical assessment. Seventy-two participants responded to the questionnaire. A tool was developed to elicit responses from the Nurse Practitioners on areas of specialty and years practicing. Five questions were specific to symptoms of Adult ADHD. The Nurse Practitioner was asked: Do you screen, diagnose, manage or refer Adult ADHD within your practice? What are the Nurse Practitioners attitudes and perceptions towards Adult ADHD?

Conclusion: Results revealed PCPs has a higher educational level and number of years practicing than the Specialty group. PCPs routinely screened for Adult ADHD at a higher frequency than did Specialty providers ($U = 433.5$, $p = .011$). Most Nurse Practitioners had

positive attitudes and perceptions toward Adult ADHD and were of the opinion that it was within their provider role as a Nurse Practitioner. Nurse Practitioners can take an active role in screening, diagnosing and referring adults with ADHD for treatment. A standard of practice to screen for Adult ADHD needs to be developed by primary care providers. Better screening and knowledge base is important to detect and provide intervention strategies to reduce symptoms or adult ADHD sufferers.

ACKNOWLEDGEMENTS

I would like to dedicate this research study to my sister in dealing with this disorder and encourage her and others that life with Adult Attention Deficit Hyperactivity Disorder is a challenging and truly manageable disorder. I would like to thank my chair Dr Janet Barnfarther for her support and belief in me with this project. Dr Janet Barnfarther was my strong foundation that I could finish this project. I would also like to thank Cynthia Rourke for her help with my writing skills and comprehension on this project. You're truly a friend to me. Also I would like to thank my family for supporting me through these years of school. Their love and desire for me to earn my degree has carried me through. What matters most is that my children know that if you have a desire and drive for a goal never let anything stand in your way. You can reach all your goals that you set in life, theirs no person or disorder that can claim your dreams. And to all the ADHD individuals out there you have been blessed with a disorder that can be productive and utilized for the greater good by believing in yourself.

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Chapter I

Introduction

Attention Deficit Hyperactivity Disorder (ADHD) is typically considered a childhood disorder that is often outgrown. Symptoms of ADHD are now known to continue into adulthood. Studies indicate that children with ADHD continue symptoms of the disorder throughout their lifespan. There are various degrees of symptoms prevalent in children, adolescents and adults. Research has shown that adults with attention deficit hyperactivity disorder have a pattern of demographic, psychosocial, psychiatric, and cognitive features that mirrors well-documented findings among children with the disorder (Biederman, Faraone, Spencer, Wilens, Norman, Lapey, 1993). ADHD affects all ages and socioeconomic groups around the world.

ADHD children managed by pediatricians until late adolescence often are unmanaged in adulthood. A common belief was that childhood ADHD is outgrown by adulthood and that no further ADHD treatment modalities were necessary. Because of the increased awareness that ADHD continues into adulthood, more individuals are presenting to their family physicians for evaluation. The majority of adults present as self referral. Family Physicians can be uncomfortable screening and diagnosing ADHD in adults. The lack of reliable information on Adult ADHD and an easy to use screening tool has obscured the reality of ADHD being an adult disorder. Diagnosis and treatment are difficult for the primary care provider because individuals with it can display with it a high potential for abuse of medication treatment along with many co-morbid disorders. There is little information about Adult ADHD further making providers

reluctant to screen for ADHD. Most information about the etiology, symptoms and treatment of Adult ADHD is developed from observations obtained from children. Research on Adult ADHD is in its early stage but is evolving. Increased research about the attitudes and perceptions of Adult ADHD will provide insight into how to incorporate its screening into clinical practice.

Primary care physicians express that they are more knowledgeable about depression than they are about screening and management of Adult ADHD symptoms (Adler, 2003). Screening individuals for Adult ADHD within primary care can lead to early recognition and treatment modalities. Primary care providers have an important role in managing Adult ADHD through the use of screening tools and providing treatment modalities for Adult ADHD within their practice. Inattentiveness to this disorder has a major negative impact on individuals with Adult ADHD. Primary care providers play a pivotal role in assisting individuals in society to lead productive lives by properly addressing Adult ADHD. This study examines the extent to which primary care providers screen for Adult ADHD, manage its care and determine their attitudes and perceptions toward Adult ADHD.

The questions posed for this research are:

1. Is there a difference between primary care providers and specialty providers for routinely screening for Adult Attention Deficit Hyperactivity Disorder?
2. What tool is primarily utilized to screen for Adult ADHD within the primary care setting?
3. Is there a difference between primary care providers and specialty providers for diagnosing Adult ADHD or referring Adult ADHD individuals?
4. Is there a difference between primary care providers and specialty providers for treating Adult ADHD or referring for treatment?

5. What are the primary care providers and specialty providers' attitudes and perceptions toward Adult ADHD?

CHAPTER II

Review of Literature

A 2003 survey conducted by Dr Lenard Adler and funded by Eli-Lilly and company, sampled 400 physicians about their knowledge of Adult ADHD screening. The survey findings revealed that physicians are reluctant to diagnose or screen for Adult ADHD. Responses indicated that there lack of an easy to use tool for screening Adult ADHD makes it more difficult to take an active role in screening (Adler, 2003).

Unfortunately, symptoms of Adult ADHD often go unrecognized by primary care providers because of inadequate interviewing, failure to consider Adult ADHD in the differential diagnosis and the lack of emphasis on psychiatric disorders as compared with physical illness. Primary care is the ideal setting to screen for the disorder because of the high number of clients seen in this health setting are present. Whether the primary care provider diagnoses and manages treatment, or refers clients to mental health providers the essential outcome is to offer Adult ADHD sufferers guidance for the disorder. Screening for Adult ADHD assists in discovering the prevalence of individuals within communities with this disorder and offers options for treatment modalities resulting in decreased poor life outcomes.

Standardized measures for screening outcomes results in improvement of patient outcomes. One study revealed screened patients who were treated with antidepressants were significantly improved after four weeks compared with untreated controls (Kamerow, 1997). There are a number of reasons to screen for Adult ADHD. Studies have shown that sufferers of Adult ADHD exhibit lower socioeconomic status and higher incidence of dropping out of school, unemployment and marital problems as compared to non-ADHD adults. In addition, they have fewer years of schooling, lower occupational achievement and poor social skills with increased

risk for poor medical health, serious motor vehicle crashes, cigarette smoking, and substance abuse (Weiss & Murray, 2003). Adult ADHD results in increased financial costs to society because of the high risk behaviors elicited by adults with ADHD. The ADHD sufferer often has low self-esteem and tends to self medicate to cope with the symptoms. Many times co-morbid disorders of anxiety, substance abuse, and depression exist with the disorder. Antisocial behavior is prominent in ADHD adults. The "Study of Adult Psychiatric Status of Hyperactive Boys Grown Up" revealed that male children with ADHD are at significantly higher risk for antisocial and substance-related disorders (Mannuzza, Klein, Bessler, Malloy, & LaPadula, 1998). Screening and management of adults who suffer from ADHD is warranted by the primary care providers to assist these individuals in becoming contributing productive individuals and decreasing substance-related disorders associated it adult ADHD that impact society.

Screening Tools

Beginning with the office visit in clinical practice, the primary care provider can effectively screen for Adult ADHD. The screening tool can be easily administered to adults in the primary care setting. The World Health Organization developed a tool in 2003 for pre-screening of Adult ADHD. The twenty-six question questionnaire named "Adult ADHD Self-Report Scale Symptom Checklist" can be given to primary care clients in the waiting room prior to being evaluated. The tool is intended to help the clinician determine if further screening for ADHD symptoms are warranted

The pre-screening is six question recall by the patient within last six months. If the results of the pre-screen tool are high, then the primary care provider can use the eighteen question-questionnaire, which is a symptoms checklist consisting of the DSM-IV criteria of

Adult ADHD developed by WHO. The checklist is subdivided into Part A and Part B. If results within Part A are high, then the clients symptoms are highly consistent with ADHD and warrants further assessment. Part B of the questionnaire provides additional clues for further assessment of symptoms. This easy-to-use screening tool can assist primary clinicians in screening for Adult ADHD. Other tools for screening and diagnostic purposes are the Wender rating scale and Copland symptom checklist for Attention Deficit Disorder.

Retrospective Recall

Retrospective data from the individuals' childhood is elicited in order to provide the base for a strong differential diagnosis of Adult ADHD. Recall of some hyperactivity-impulsive or inattention symptoms that cause impairment before age seven years were some of the retrospective data used. A study on the accuracy of adult recall of Childhood Attention Deficit Hyperactivity Disorder revealed that retrospective diagnosis made from the basis of self-reports had greater validity than diagnosis made during childhood (Mannuzza, Klein, Bessler, & Shrout, 2002). Age of onset criteria was examined in a retrospective study of adult patients with ADHD with findings that "there was no difference between early onset and late onset ADHD groups in terms of psychopathology" (Hesslinger, Tebartz van Elst, Mochan, & Ebert, 2003).

DSM-IV Symptoms

The Diagnostic Statistical Manual Edition 4, known as DSM-IV, is the principle tool for diagnosis of Adult ADHD. Although the DSM-IV is tailored to childhood symptoms, adult symptoms vary by degrees. Hyperactivity is often diminished by adulthood. DSM-IV diagnosis of Adult ADHD is tailored to adult symptoms within the workplace, home and socialization of marriage and relationships.

DSM-IV Diagnostic Criteria for ADHD

A. Either 1 or 2:

1. Six (or more) of the following symptoms of inattention have persisted for at least six months to a degree that is maladaptive and inconsistent with developmental level:

Inattention

- Often fails to give close attention to details or makes careless mistakes in schoolwork, work or other activities
- Often has difficulty sustaining attention in task of play activities
- Often does not seem to listen when spoken to directly
- Often does not follow through on instructions and fails to finish schoolwork, chores or duties in the workplace (not due to oppositional behavior or failure to understand direction)
- Often had difficulty organizing tasks and activities
- Often avoids, dislikes or is reluctant to engage in tasks that require sustained mental effort (such as schoolwork, or homework)
- Often loses things necessary for tasks of activities (e.g., toys, school assignments, pencils, books or tools)
- Is often easily distracted by extraneous stimuli
- Is often forgetful in daily activities.

2. Six (or more) of the following symptoms of hyperactivity-impulsivity have persisted for at least six months to a degree that is maladaptive and inconsistent with developmental level:

Hyperactivity

- Often fidgets with hand or feet or squirms in seat
- Often leaves seat in classroom or in other situations in which remaining seated is expected
- Often runs about or climbs excessively in situations in which it is inappropriate (in adolescents or adults, may be limited to subjective feelings of restlessness)
- Often has difficulty playing or engaging in leisure activities quietly
- Is often "on the go" or often acts as if "driven by a motor"
- Often talks excessively

Impulsivity

- Often blurts out answers before questions have been completed
- Often has difficulty awaiting turn
- Often interrupts or intrudes on other (e.g., butts into conversations or games)

B. Some hyperactive-impulsive or inattentive symptoms that caused impairment were present before age seven years.

C. Some impairment from the symptoms is present in two or more settings (e.g. at school (or work) and at home).

D. There must be clear evident of clinically significant impairment in social, academic or occupational functioning. (Searight, Burke, & Rottnek, 2002)

ADHD Symptoms

Symptoms of adulthood ADHD include, but are not limited to, hyperactivity, inattention, and impulsivity. Hyperactivity can continue into adulthood but displayed in a milder form than displayed in childhood. As the individual ages, maturity of the biological system begins to slow with less energy being dispensed as aging progresses. Although, this varies greatly between individuals. The Adult ADHD hyperactive individual may feel that they can never mentally rest. They have a hard time turning the mental thinking off often saying that they are always "on the go" either mentally or physically and have a difficult time relaxing. Often adult ADHD sufferers are work alcoholics and may work on many tasks at the same time; often starting several projects without ever finishing. Projects begin to pile up, the Adult ADHD sufferer becomes overwhelmed, and self-esteem decreases due to feelings of unproductiveness from never finishing what was started.

Inattention displays itself as difficulty staying focused on a given task predominates. The person often feels that their mind jumps from one thought process to another. The attention span is very limited and the train of thought is lost if the individual is required to stay on a specific task for an extended period of time. There also is difficulty with organization resulting in lose or displacing of objects or thoughts. The ADHD adult is perceived as lazy, lacking motivation, disorganized and forgetful. When judging themselves with non-ADHD adults the ADHD individual develops a sense of low self-esteem and self-worth. The prevalence of Adult ADHD individuals with low self-esteem is significant.

Impulsivity mimics the saying "think before you act out". Adult ADHD symptoms of impulsivity are displayed by acting out before thinking. Adult ADHD sufferers will impulsively buy, speak out and act out before ever using cognitive judgment skills of rethinking the scenario

and mentally delaying consequences. They often lack internal self control to think before acting out. ADHD adults will act out quickly in response to a situation. Sometimes this can be to the ADHD adult's advantage, but can lead to extremely dangerous behavior risks.

Etiology of ADHD

The theory of poor parenting as the cause of ADHD is no longer valid. Researchers have discovered that individuals with ADHD exhibit biochemical deficiencies as a leading cause of Adult ADHD. Two dopamine receptor genes (134 and 132) and the dopamine transporter (DAT) gene have been implicated in increasing the susceptibility of people to ADHD (Faraone, Biederman, Weiffenbach, & Keith, 1999). In addition, adults with ADHD have been found to have genetic polymorphisms in the D4 receptor compared with healthy control subjects. There is also a distinct pattern of neuropsychological deficits, including difficulty in working memory and executive functions (Faraone). Genetic susceptibility to ADHD is about 70 percent in all age groups and is thought to be somewhat higher in adults with ADHD (Faraone). Research indicates that the lack of dopamine within the brain results in decreased attention symptoms from defective brain neurotransmitter conduction. A study of impaired spatial working memory in adults with ADHD distinguished that the aspects of working memory are impaired in the adult ADHD sufferer (Dowson, McLean, Bazanis, Toone, Young, Robbins, 2004).

Familial transmission of ADHD was examined in a study comparing second-degree relatives of 140 ADHD probands and 120 normal controls. The study revealed an increased risk for ADHD in second-degree relatives of ADHD probands compared with second-degree relatives of normal control probands in evaluating the genetic epidemiology of ADHD (Faraone, Biederman, & Milberger, 1994). Family, twin, and adoption studies suggest a genetic

component to the disorder (Lamberg, 2003). Twin studies show heritability for ADHD of about 70%, similar to that for schizophrenia and bipolar disorder (Lamberg, 2003).

ADHD Diagnostics

Lab assessments and diagnostic testing have not yielded enough documented research to prove beneficial in the diagnosis of Adult ADHD (McGough & Barkley, 2004). Studies have shown specific changes in EEG patterns amongst ADHD adults and non-ADHD adults, yet validity and reliability have not been advised clinically because the majority of studies are limited to single research groups and/or small numbers of subjects (McGough & Barkley, 2004). Single photon emission computed tomography (SPECT) imagining has been used for diagnosis of Adult ADHD. Few subjects have been researched using the SPECT imaging. In some instances, such as SPECT imaging, patients are subjected to potential risks from radiation exposure (McGough & Barkley, 2004). Costs are higher for lab assessment tools than clinical interviews or reported scales; and have proven no advantage in assessment of Adult ADHD (Szymanski & Zolotor, 2001). There has not been sufficient research on diagnostic imaging to prove if it is beneficial or warranted to utilize for Adult ADHD in routine clinical use. Screening tools and symptom checklists, along with retrospective data of symptoms prior to age 7, are the criteria used most for diagnosis of Adult ADHD.

CHAPTER III

Theoretical Framework

Margaret A. Newman's model of "Health as Expanding Consciousness" provides the frame work for this study. "Nurses are seen as partners in the process of expanding consciousnesses" in the ability to enhance the awareness of primary care providers in screening for Adult ADHD (Tomey & Alligood, 2002). Family care providers can also screen for Adult ADHD. This study raises the family provider's awareness to the topic of Adult ADHD. The topic of Adult ADHD provides awareness and expands the consciousness to thoughtfully screen for ADHD within the family practice setting. Enhancing the awareness of the family care provider that Adult ADHD as a clinical diagnosis that if managed in society can be treated.

Often the Adult ADHD sufferer self medicates, exhibits poor coping and behavioral skills, along with abusing substances. Screening for Adult ADHD will favorably impact co-morbid disorders by early treatment to help establish appropriate coping and behavioral skills. Screening and treatment for Adult ADHD should continue from childhood, through adolescence and into adulthood. This study expands awareness and consciousness that Adult ADHD is a life long disability. Therapeutic treatment along with psychosocial counseling can assist the ADHD suffer in managing a chronic condition.

CHAPTER IV

Methodology

Sample

Study participants were obtained through the Michigan Nurses Association by purchasing a list of practicing Nurse Practitioners within the state of Michigan. The list contained 3000 names and addresses of Nurse Practitioners. Within the list alphabetically arranged by last name and beginning with the letter A, every fifth name was withdrawn and mailed a questionnaire.

Procedure

Before the research study began, the University of Michigan Institutional Review Board approval was obtained (Appendix C). Without knowing specialty or employment, the participants were mailed a questionnaire. Two-hundred questionnaires (Appendix B), cover letters (Appendix A) and stamped-return envelopes were mailed to Nurse Practitioners practicing within the state of Michigan. Recipients of the questionnaire chose to participate in the study by returning a completed the questionnaire. None of the recipients were obligated to take part in the study. No identifying information was requested from participants, and their responses were anonymous.

Research Tool

The questionnaire was designed by the researcher to elicit Nurse Practitioners' areas of specialty along with number of years practicing in profession. Five questions were specific to symptoms of Adult ADHD. The questionnaire determined what questions Nurse Practitioners asked of patients and yielded yes, no or other responses. The Nurse Practitioner was asked: Do you screen, diagnose, manage or refer Adult ADHD within your practice? What tool is used to

screen with and what discipline do you refer out to. What are the Nurse Practitioners attitudes and perceptions were toward Adult ADHD?

Data Analysis

Primary Care Providers (PCP) role is to provide preventative care, teach healthy life-style choices and to identify and treat common medical conditions that are non-acute emergency situations. The PCP can make referrals after assessing the urgency of the medical problem if needed. Primary Care Providers can be General Practitioners, Family Practitioners, Pediatricians, Internists, Obstetricians/ Gynecologists along with Nurse Practitioners and Physician Assistants (Harding).

Nurse Practitioner participants from the study were categorized as either primary care provider (PCP) or specialty provider after analysis of the respondent's area of specialty by using the stated above definition of a PCP. Forty-five respondents were classified as primary care providers from the stated definition/role of a PCP. The remaining twenty-seven of the total seventy-two participants were categorized as Specialty from their area of specialty provided (Table 1). Categorical data were analyzed by using Mann-Whitney U. Mean rank was obtained to whether the PCP diagnosed Adult ADHD or referred out for treatment. Mann-Whitney test was used to evaluate the mean rank between PCP and Specialty with years practicing, diagnose, refer, or managing Adult Attention Deficit Hyperactivity Disorder. The focus of the study compared responses from primary care providers and specialty providers.

CHAPTER V

Results

Of the 200 questionnaires sent, seventy- two participants responded to the questionnaire by returning it via mail for a response rate of 36%. All 72 participants were Nurse Practitioners licensed within the state of Michigan. Licensing of participants included Nurse Practitioners, Adult Nurse Practitioners, Family Nurse Practitioners, and Mental Health Nurse Practitioners.

Results of Mann-Whitney U of all Nurse Practitioners practicing resulted in a mean of 9.2 years and standard deviation (SD) of 7.1. Years practicing of forty-four Primary Care Providers results indicated a mean of 11, SD of 8.0. The results indicated a significantly higher educational level for PCP's than the Specialty group $n = 27$, mean of 6.3 and SD 3.9, 2-tailed (t-test = 2.858, $df = 69$, $p = 0.006$).

Table 1.

Specialty of Nurse Practitioner Providers of All Participants (N=72).

Specialty	Frequency
Acute Care	2
Breast Care	1
Cardiology	1
Cardiac Surgery	1
Critical Care	1
Diabetes	1
Emergency Medicine	2
Family	16
Family Planning	1
Gastroenterology	1
Geriatrics	6
General Surgery	1
Internal Medicine	5
Nephrology	1
Neurology	1
Neurosurgery	1
Occupational Health	1
Orthopedics	2
Primary Adult Care	2
Plastic Surgery	1
Psychiatry	4
Radiation Oncology	1
Rehabilitation	1
Rheumatology	2
Urgent Care	1
Woman's Health	15

Legend- Bold type analyzed as Primary Care Provider

Table 2.

Number of Years Practicing as a Nurse Practitioner of All Participants.

Years Practicing	Frequency
0.5	1
1.0	5
2.0	4
2.5	1
3.0	3
4.0	2
5.0	7
5.5	1
6.0	9
7.0	3
7.5	1
8.0	7
9.0	2
9.5	1
10.0	3
10.5	1
11.0	2
12.0	1
13.0	2
15.0	3
17.0	1
19.0	1
20.0	3
21.0	1
22.0	1
23.0	1
24.0	1
25.0	1
29.0	1
30.0	1
Missing	1

Research Questions outlined in Bold Print.

Is there a difference between Primary Care Providers and Specialty providers for routinely screening for Adult ADHD?

Seventy-two participants responded to the mailed questionnaire. Forty-five respondents were analyzed as Primary Care Providers. Primary Care Providers n = 45 were analyzed using Mann-Whitney U for screening for Adult ADHD within their practice. Results indicate of the 45 PCP mean rank = 40.37 answering yes to (Do you Screen for Adult ADHD?). Specialty mean rank = 30.06. Mann-Whitney U statistic = 433.5, Z = -2.54, significant (2-tailed) p = 0.011. There is a statistically significant difference between PCP and Specialty regarding screening with PCP's being higher. Some participants (n=6) responded using the "C- other" category and provided a specific answer as indicated below (table 3).

Table 3.

Responses to Screening of Adult ADHD by all Participants.

Unedited Responses
• Unofficially no specific tool used
• Visit specific
• I ask if they struggled in school. Did they finish school?
• Screen for functional problems/depression- if ADHD comes out under functional problems
• Only if they complain of or there is a change in activities of daily living.
• Look for attention deficits after total brain injury.

What tool is being utilized to screen for Adult ADHD within the Primary Care Setting?

Responses of participants to what tool is utilized in screening for Adult Attention Deficit Hyperactivity Disorder within the Nurse Practitioners practice.

Table 4.

Tools for Screening by All Participants.

Unedited Responses
• Mood disorder/depression
• Adult ADHD screening form
• Check sheet from Stratera and DSM
• List of questions-similar to tool made by Lilly Pharmaceuticals
• No tools-comprehensive psychiatric evaluation-including mental status
• Asking previous questions and a tear off from one of the drug companies
• Questionnaire
• Stratera Questionnaire
• Your questions/ One does not always have to use "a tool"
• Use symptoms, complaints, that make in depth questions
• MDSD
• ASRS
• Observe pt during exam, talk about their health patterns, social concerns
• Drug company screen
• Evaluation assessment tool-provided at the clinic

- No tool-We have a psychiatrist available to consult or meet patient
- Review of systems/functional health patterns
- DSM guidelines
- Impact Battery- Computerized

Is there a difference between Primary Care Provider and Specialty Providers for diagnosing Adult ADHD or referring Adult ADHD individuals?

Results are similar to those occurring by chance regarding are Primary Care Providers diagnosing or referring patients out. Do you diagnose or refer for Adult ADHD? Mann-Whitney U analysis demonstrates a non-significant finding 454.500, $Z = -0.430$, (two tailed) $p = 0.667$. Primary Care Provider mean rank was 32.32 and the Specialty mean rank was 34.24.

Is the Primary Care Provider treating individuals for Adult ADHD or referring for treatment?

When asked: Do you manage treatment or refer out, Mann-Whitney U demonstrates a non-significant finding of $U = 401.500$, $Z = -0.931$, (two-tailed) $p = 0.352$. Primary Care Provider mean rank was 31.06 and the Specialty mean rank = 35.25. Participants who responded they "referred out" provided specific disciplines (table 5) when asked: Who do you refer out to?

Disciplines Nurse Practitioners are referring Adult ADHD.

Table 5.

Identified Disciplines from Nurse Practitioners to Refer ADHD patients

Unedited Responses	
Discipline	Frequency
Behavioral Health Practice	2
Clinics	1
Consult	1
Employees own Provider	3
Mental Health	8
Neurophysiology	2
Primary Care Physician	5
Psychology	2
Psychiatry	10
Specialist by Need	1
Varies	1

What are the Primary Care Providers and Specialty Providers attitudes and perceptions toward Adult ADHD?

Responses were grouped by the nurse researcher into categories of positive, neutral, and negative attitudes/perceptions of Adult ADHD. The following definitions were used. Positive category implies awareness of Adult ADHD, along with Adult ADHD being within the Nurse Practitioner's providing role. Neutral category of attitudes/perceptions implies unaware/unidentifiable knowledge of Adult ADHD and out of the Nurse Practitioner's providing role. Negative category implies misdiagnosed and/or disbelief of an existing Adult Attention Deficit Hyperactivity Disorder.

Table 6.

Attitudes and Perceptions of Participants (n=61)*.

Category	Frequency
Positive	37
Neutral	20
Negative	4

* Some participants did not provide responses.

CHAPTER VI

Discussion

Margaret A. Neuman's model of "Health as Expanding Consciousness" (Tomey & Alligood, 2002) provides the framework of screening for Adult Attention Deficit Hyperactivity Disorder (ADHD) by Primary Care Providers (PCP). "Nurses are seen as partners in the process of expanding consciousness" (Tomey & Alligood, 2002, p 300). This study revealed it is possible to enhance the awareness of Nurse Practitioners (NP) within the primary care settings to screen for Adult Attention Deficit Hyperactivity Disorder. In addition, this study reveals that PCP's in the primary care setting would have more enhanced awareness of Adult ADHD within the primary care settings to screen for Adult ADHD. More guidance to the Nurse Practitioner to become aware of assessing for Adult ADHD through screening, diagnosing and referring for treatment is within the scope of practice.

Results were analyzed between two groups of providers: 1) Primary care provider and 2) Specialty. Primary Care Providers can be General Practitioners, Family Practitioners, Internists, Obstetricians/Gynecologist along with Nurse Practitioners and Physician Assistants (Harding, 2005). Specialty group consist of Cardiology, Diabetes, Plastic Surgery, Adult Rheumatology, Urgent Care, Acute Care, Neurosurgery, Emergency Medicine, Psychiatric/Mental Health, Gastroenterology, Orthopedics, General Surgery, Occupational Heath, Radiation Oncology, Rehabilitation and Breast Care. Primary care providers had more years experience than the Specialty group yielding a statistically significant finding. It may be possible that the higher number of years practicing by the PCPs could mean that they have more experience in screening for the disorders. The higher years of practice by PCP's could also correlates to more exposure and experience with Adult ADHD than the specialty groups.

Are Primary Care providers screening for Adult ADHD? Results revealed PCP are screening for Adult ADHD ($p=0.011$). An article on Primary Care Treatment of ADHD revealed that during adulthood the presentation in primary care settings is usually one of self-referral (Culpepper, 2006). Adult ADHD that is unrecognized by PCP's during adulthood could imply why there is a higher prevalence of self-referral. The high prevalence of self-referral for Adult ADHD could imply that the PCP either does not recognize or takes the time to determine if the disorder exists. An article of Attention deficit disorder in adult's by Canadian family physicians indicated "Adult ADD is of particular relevance to family physicians because these people usually present in primary care, often with seemingly unrelated or coexisting problems, which is why the diagnosis is frequently missed" (Weiss & Murray, 2003, p51). Other medical problems of the individual blur the capabilities of the PCP to recognize Adult ADHD. The family physician's role is to suspect the possibility of ADD, confirm the diagnosis, and initiate a comprehensive treatment plan that includes referral to mental health services if required (Dates, 2005). This statement supports a model of NP's to develop a conscious awareness to screen for Adult ADHD within primary care. A study of Effectiveness Outcome in Attention Deficit Hyperactivity Disorder revealed that ADHD is prevalent in 4.7% of adult population. There are more cases of adult ADHD than childhood ADHD, because there are more adults in our population than there are children (Weiss, Gadow, & Wasdell, 2006) Only a minor proportion of adults have been diagnosed, and even fewer of those diagnosed have received appropriate treatment modalities (Weiss, Gadow, & Wasdell, 2006). This statement supports the validity that PCP's need to continue to screen and even increase their ability to detect Adult ADHD. Some of the lack of screening is in Specialty groups. They may not be screening for Adult

ADHD because they may be more focused on the problem presented by the individual within the specialty group. This in turn leads to undiagnosed adults within society.

What tool is being utilized to screen for Adult ADHD? Responses were displayed unedited within the Results section. Screening tools varied amongst participants. There were 19 different tools mentioned in the survey making it difficult to find any commonalities among the tools (table 4). The lack of commonalities among the tools could result in no consistency in the screening phase among health care providers. An article from Dr Adler's Study of Physicians Perceptions of Adult ADHD Executive Summary indicated that PCP would prefer an ADHD screener that is easy to use, validated, quick to administer, and developed by specialty (Adler, 2003).

Are Primary Care Providers diagnosing Adult ADHD or referring? Results revealed a non-significant finding that PCP's are not diagnosing individuals with Adult ADHD at frequency that is different from Specialty providers. Are PCP not diagnosing due to an unawareness that Adult ADHD does exist? Are PCP not diagnosing due to a non-standard easy to use screening tool? Further investigation is warranted in determining why PCP's are not diagnosing for Adult ADHD. PCP's increased awareness of Adult ADHD potentially minimizes individual sufferers from going unrecognized within society. Without a diagnosis there are no means to help.

There was no difference between provider groups regarding diagnosing or referring out individuals with Adult ADHD. A non-significant finding indicated that there is no difference between PCPs and Specialty practitioners in their responses for treating individuals with Adult ADHD. This finding further supports the need for PCP to improve their knowledge of Adult ADHD in order to address the individual's problem in their own practice.

What discipline are Nurse Practitioners referring individuals to? The responses indicated that Psychiatry, Mental Health and Primary Care Physicians are the three highest specialties (Table 5). The indication is that Adult ADHD has psychological causes that are too serious or complex and beyond their scope of practice.

The study examined attitudes and perceptions of Adult ADHD by Nurse Practitioners. Positive attitudes and perceptions responses of both groups indicated an awareness of Adult ADHD along with Nurse Practitioner's implying that Adult ADHD was within their role of practice (n=37). Neutral attitudes and perceptions indicated the NP was unaware and has unidentifiable knowledge of Adult ADHD along with being out of the NP's practicing role (n=20). Negative attitudes and perceptions responses implied misdiagnoses of Adult ADHD and a disbelief that Adult ADHD is an existing disorder (n=4). Results reveal in the NP's responses that Adult ADHD was within their scope of practice and a medical condition to screen for by the positive responses of attitudes and perceptions. Positive results imply PCP's are becoming more aware of Adult ADHD and the importance of screening for diagnosis. As a participant in the study "Health as Expanding Consciousness" (Tomey & Alligood, 2002) NP's develop a conscious awareness to screen for Adult ADHD within their practice. Providing ADHD individuals with early screening, treatment modalities would reduce the number of Adult ADHD sufferers that go unrecognized.

Nurse Practitioners need an increased conscious awareness to improve screening especially regarding use of screening tools for Adult ADHD within their practice role. Nurse Practitioners could go beyond screening and could take a more active role in diagnosing and referring adults with ADHD for treatment. The study indicates that there should be a standard of practice to screen for Adult ADHD within the initial routine health screening. Standardized

screening of Adult ADHD may result in a higher probability that the disorder is unrecognized and that programs and processes for treating the individual are developed. Making Adult ADHD comparable to commonly screened disorders such as depression and anxiety would benefit many individuals. Standards of practice need to be developed to incorporate Adult ADHD within the differential diagnosis of presenting psychiatric symptoms of inattentiveness/ hyperactivity. Studies have shown that sufferers of Adult ADHD exhibit lower socioeconomic status, higher incidence of dropping out of school, unemployment and marital problems as compared to non-ADHD adults (Weiss & Murray, 2003). The screening of Adult ADHD increases the base knowledge about the disorder allowing detection and intervention strategies to be incorporated to eliminate disability of symptoms to sufferers.

Future research is needed to further evaluate a greater number of NP study participants practicing within a primary care setting and their conscious awareness of Adult ADHD. More research on the prevalence of Adult ADHD identified through screening along with research that would better determine the number of individuals through screening who exhibit the disorder have gone unrecognized. Professional organizations need to work with the Nurse Practitioners to develop educational programming to increase the awareness of screening for Adult ADHD. Funding provided to establish a program that targets Primary Care Providers to screen for the disorder to minimize individuals within society who suffer with Adult ADHD would be beneficial. Ongoing research in screening modalities needs to be funded through grants for other means.

Factors influencing results include internal validity threats of utilizing only Nurse Practitioners within the state of Michigan. To increase internal validity related to selection, a random sample cold be drawn using state of and national sampling frames from professional

organizations and state licensing bureaus. To increase the internal validity related to PCP's screening for Adult ADHD a more focused sample is needed. A response- bias of self report represents a threat to the internal validity of the study because participants may distort responses to present a more favorable image of themselves. NP's may have reported that they are screening for Adult ADHD within their practice to avoid the impression they are not providing quality of care. Response bias of tool utilized along with attitudes and perceptions could be reported to avoid being unaware of Adult ADHD.

Limitations of the study were the small sample of primary care providers. Power analysis to determine sample size would help knowing more about Type I and Type II errors. The researchers design tool could be examined for its psychometric properties to learn more about the reliability and validity of data quality.

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Appendix A

The University of Michigan-Flint

Graduate Nurse Practitioner Program

April 7, 2006

Dear Nurse Practitioner:

I am a student in the Family Nurse Practitioner Graduate Program at The University of Michigan-Flint. I am conducting a research study to learn more about the nurse practitioner's assessment of screening for Adult Attention Deficit Hyperactivity Disorder.

Your name was obtained from a list provided to me by the Michigan Nurses Association. Your participation in this research study is voluntary and your responses will be anonymous. There are no foreseeable risks or discomfort involved in the study. The benefits of participation in the study include awareness to providers for screening of Adult Attention Deficit Hyperactivity Disorder. A copy of the abstract containing the results is available to you upon request at the end of the questionnaire.

If you choose to participate in this survey, please complete the enclosed questionnaire and return to Stacy Welsh, RN in the enclosed self-addressed postage paid envelope provided. Approximate amount of time involved in answering questionnaire is ten minutes. The deadline for return of the questionnaire is April 25, 2006. If at any time you have questions about your rights as a research participant please call the Office of Research at the number listed below.

Thank you for giving this project your careful consideration.

Sincerely,

Stacy Welsh, RN
University of Michigan
Department of Nursing
Flint, Michigan 48502
(810) 762-3420

Janet S. Barnfather, PhD, RN
Associate Professor
Thesis Advisor
(810) 766-6861
janbarn@umflint.edu

Suzy Sikora
Office of Research
(810) 762-3383
sgaia@umflint.edu

Appendix B

The University of Michigan-Flint
Graduate Nurse Practitioner Program

Instructions: **This survey is to be completed by a Nurse Practitioner for your <u>adult patients</u> only.**

1. I am licensed to practice as a: _____

2. My area of specialty is: _____

3. Number of years practicing as a NP: _____

4. Do you ask patients if they have difficulty concentrating on one task?

   A. Yes B. No C. Other _____
   (Please be specific.)

5. Do you ask patients if they have problems remembering appointments or obligations?

   A. Yes B. No C. Other _____
   (Please be specific.)

6. Do you ask patients if they feel overly active and compelled to do things, like being driven by a motor?

   A. Yes B. No C. Other_____
   (Please be specific.)

7. Do you ask patients if they fidget or squirm with their hands or feet when they have to sit down for a long time?

   A. Yes B. No C. Other_____
   (Please be specific.)

8. Do you ask patients when they have a task that requires a lot of thought, how often do they avoid or delay getting started?

A. Yes B. No C. Other_____
(Please be specific.)

9. Do you screen for Adult Attention Deficit Hyperactivity Disorder in your practice?

A. Yes B. No C. Other_____
(Please be specific.)

10. What tool do you use to screen with?

_____

11. Do you diagnose patients or refer out?

A. Diagnose B. Refer C. Other_____
(Please be specific.)

12. Do you manage treatment or refer out?

A. Manage B. Refer C. Other _____
(Please be specific.)

Answer question 13 if you refer out.

13. Who do you refer out to?

_____

14. What are your attitudes and perceptions toward Adult ADHD?

_____

_____

_____

(If more space needed please continue on back of page.)

15. Would you like to receive a summary of the findings of this research project?

A. Yes B. No

If yes, your answers will be kept confidential and will not be linked to your name or any other identifying information. Only group data will be examined.

Please indicate name and address for mailing of a one page abstract before May 2006.

Name: _____

Address: _____

_____

_____

If you would prefer the report sent via e-mail, please include your e-mail address:

_____

Please mail your questionnaire by using the enclosed self-addressed, stamped envelope.

Thank you for your time and careful consideration of this questionnaire.

Appendix C

Flint Institutional Review Board (IRB) • 530 French Hall, 303 E. Kearsley St, Flint, MI 48502 • phone (810) 762-3383 • fax (313) 593-0526 • research@umflint.edu

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Date: 1/16/2006
To: Dr. Janet Barnfather
Stacy Welsh
Cc: IRB Flint
Subject: Initial Study Approval

The Flint Institutional Review Board (IRB) has reviewed and approved the research proposal referenced below. The IRB determined that the research is compliant with applicable guidelines, state and federal regulations, and the University of Michigan's Federalwide Assurance with the Department of Health and Human Services (HHS). The reviewer had the following comments with regard to this study: *Because this study is minimal risk (attitudes of nurse practitioners about adult attention deficit hyperactivity disorder), using a survey that does not identify any individual, expedited review is appropriate. The PIs also respect participants' rights and privacy by giving them the opportunity to receive a summary of the results when data collection and analyses are complete, but their mailing information is separate from their survey responses. (And finally, a small "aside"--there are several typos and grammatical errors in the application itself--in the future please review all material and correct the mistakes before submission).*

Any proposed changes/amendments in the research (e.g., personnel, procedures, or documents), no matter how minor, must be approved in advance by the IRB unless necessary to eliminate apparent immediate hazards to research subjects.

The approval period for this project is listed below. ***Please note your expiration date.*** If the project is scheduled to continue beyond this date, submit a Scheduled Continuing Review application **at least two months prior** to the expiration date to allow the IRB sufficient time to review and approve the project. **If the approval lapses, no work may be conducted on this project until appropriate approval has been obtained, except as necessary to eliminate apparent immediate hazards to research subjects.**

The IRB must be informed of all unanticipated or adverse events (i.e., physical, social, or emotional) or any new information that may affect the risk/benefit assessment of this research.

The online forms for amendments, adverse event reporting, and scheduled continuing review can be obtained by accessing the eResearch workspace for this approved study at https://eresearch.umich.edu.

It is expected that only the current IRB-approved version of the informed consent document(s) will be used in conjunction with this research. To obtain and download a copy of the current IRB-approved informed consent document(s), PIs and Study Staff should access the eResearch workspace for this approved study and view the "Documents" tab.

Submission Information:
Title: Welsh, Stacy: Screening by Primary Care Provider for Adult Attention Deficit Hyperactivity Disorder
IRB File Number: HUM00000341
Initial IRB Approval Date:
Current IRB Approval Period: **1/14/2006 - 1/15/2007**
Expiration Date: **1/15/2007eResearch workspace: Welsh, Stacy: Screening by Primary Care Provider for Adult Attention Deficit Hyperactivity Disorder**
UM Federalwide Assurance: FWA00004969 Expiration 6/12/06

Sincerely,

Marianne McGrath
Chair, IRB Flint